

Public Attitude Assessment Studies on Energy Conservation

Surveys 1 and 2



CITY of Ottawa

Department of Community Development

CITY OF OTTAWA - VILLE D'OTTAWA

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Action Exécution		Information Pour votre gouverne	Ward Quartier
☐ Administrative administrative	☐ Policy politique	☒	City-wide

To/A:

☒ [2] Ottawa Planning Board Commission d'urbanisme d'Ottawa	☐ Non-Profit Housing Logement à but non lucratif
☐ [] Physical Environment Committee Comité de l'environnement	☐ Executive Committee Comité exécutif
☐ [] Admin., Policy and Priorities Committee Comité de l'adm., des politiques et des priorités	☐ Board of Directors Conseil d'administration
☐ [1] Other Energy Advisory Committee Autre	☐ [] City Council Conseil municipal

SUBJECT/OBJET

Public Attitude Assessment Surveys 1 and 2 on Energy Conservation/Sondages
d'opinion publique Nos 1 et 2 sur la conservation de l'énergie. CD-164-3

FOR INFORMATION

On December 2, 1981 the Council approved a programme of Public Attitude Assessment Surveys on Energy Conservation, to help assess the impact of the Council's Energy Conservation Programme and to provide direction for future policy on the matter. The programme consists of 6 studies with the following objectives:-

1. Establish the basic issues uppermost in the public's mind as regards energy conservation, through informal conversations with individuals and organizations;
2. Establish levels of awareness and obtain comparative data on energy use by various households through interview or questionnaire suitable for statistical processing;
3. Obtain feedback on various aspects of the City's Policy on Energy Conservation through a series of citizen panels;
4. Present alternative views in newsletters on aspects of the City's Policy to solicit response from citizens and citizen groups towards annual revisions of this Policy;
5. Publish informative articles and disseminate alternative views in mass media to increase public interest on energy conservation ("CONSERVATION PIPELINE");
6. Piggy-back on a national survey on energy conservation if and when it becomes available - or lobby for the promotion of such a survey - in order to compare Ottawa's approach and performance with other municipalities.

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The programme for these studies will extend to the end of 1983 and this report will summarize the results of Surveys 1 and 2, carried out in 1982 to meet the objectives outlined in 1 and 2 above. Details of these Surveys appear in Attachments 1 and 2, while the conclusions and policy implications are as follows:

CONCLUSIONS

SURVEY 1: INFORMAL CONVERSATIONS WITH INDIVIDUALS AND ORGANIZATIONS

(Carried out in February and March, 1983)

- The enthusiasm of respondents as regards energy conservation was assessed as follows:

Very high:	26%
Moderate :	58%
Low :	10%
Absent :	6%

- According to 39% who stated their occupation, people of SERVICE OCCUPATIONS formed the majority among the respondents. According to those who stated their age, the AGE GROUP 30-50 years old provided 50% of the response.

- The general attitude of the cross section of people surveyed was one of moderate to high receptiveness to the topic of energy conservation. A majority (90%) of those interviewed had a good understanding of the concept of energy conservation, especially as it related directly to their specific needs. On a general level, 68% were convinced of the need to conserve energy now and for the future.

- Public awareness had been aroused by various government campaigns on energy conservation. No less than 75% attributed this awareness and initiative to such government action. As a result, 85% had taken some initiative to conserve energy, 72% of which felt their efforts and expense had been a worthwhile venture.

- The media were considered to be the most effective means to increase public awareness, as 56% of those interviewed had learned about conservation through this channel.

Most of the initiative taken to conserve energy (94%) revolved around three main actions, as follows: -

a) upgrading insulation	40%
b) turning down thermostat or,	30%
c) turning off lights	24%

- Similarly, new habits tended to coincide with the increase of awareness for energy conservation. The most popular or widespread new habits developed by the respondents were:

a) turning down thermostat	41%
b) turning off lights	35%
c) taking the bus more often	19%

- A majority of respondents considered the three tiers of government as the main sources of information. The Federal Government, (Department of Energy Mines and Resources) was seen as the key agent (57%). Only 20% would seek out information from the Provincial or Municipal Governments.
- Most information filtered through the media (11%) and government publications (6%). Fifty-Nine percent felt the Federal Government, (Energy, Mines, and Resources) should be responsible to inform the public on energy conservation. Nine percent felt it should be the Provincial Government's responsibility, while 6% considered City Hall to have such a role.
- Most respondents perceived the various levels of government as being the most reliable source on energy conservation through media advertisements and publications. Such reliability was based on their understanding of each tier of government as "research-oriented".

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- 63% of the respondents sought energy conservation information during the Fall and Winter seasons.
- Understanding of Government policy on conservation tended to be very limited. Only 38% could state what the Federal Government policy was on energy conservation. Fifty-One percent assumed the Provincial Government had a policy while 80% felt that Municipalities should be involved by encouraging energy efficiency, keeping the public informed and encouraging neighbourhood initiatives.
- The CONSERVATION PIPELINE, (informative articles relating to energy conservation) had reached out to 45% of those surveyed. When asked what kind of information they would like to see in the Pipeline articles, only 24% responded with suggestions. Those suggestions basically included conservation methods and money saving tips. Many respondents suggested that the PIPELINE articles should be continued to inform the public. In fact, more extensive articles were recommended in the City Newspapers and Neighbourhood Newspapers. 'How to do it' articles had the greatest popularity, and case studies of home renovation problems and their respective solutions as they related to energy conservation were considered most useful.
- 56% of the respondents suggested ways to involve the public in energy conservation. Thirty-seven percent recommended a public participation process, and 22% had heard of the City of Ottawa's Energy Action Plan Process, a project designed to encourage broad participation. Considering the fact that the Action Plan Process had still not been launched at the time this survey was taken (February and March 1982), 22% was a surprisingly high level.
- The basic issues uppermost in the public's mind as regards energy conservation in 1982 were the following: -
 1. How to save energy?
 2. How to obtain information?
 3. Where to find reliable information?

As a sequel to the survey and in response to these basic questions, the Energy Planning Section of the Department issued a 60-page booklet titled: RENOVATION GUIDE TO ENERGY EFFICIENCY IN YOUR HOME (in English and French)

This summarized the most reliable and least controversial advice given in some 50 publications. About 400 copies were distributed in the first year and demand continues to be high.

SURVEY 2: QUESTIONNAIRE ON ENERGY USE AND LEVELS OF AWARENESS IN CONSERVATION
(Carried out in August and September 1982)

One in two car drivers in Ottawa averaged less than 10,000 kms/year and spent less than \$1,000.00 per year on the car. Similarly, about one in two residents spent less than \$25.00 on public transport. Among the factors underlying this relative thrift on transportation there may be some urban characteristics - e.g. small size of city, good road network, a network of cyclepaths and running tracks, etc. - as well as some socio-economic characteristics - e.g. high awareness in energy conservation, high education, relatively small household size, physical fitness, etc.

More than half the households responding to the survey used oil for heating. This provides considerable scope for promoting the Canada Oil Substitution Programme. Among the ways that respondents used to save energy, simple actions - turning lights off and the thermostat down - were naturally the most popular, but technical means were not far behind - upgrading insulation, using energy efficient appliances and weatherstripping plus caulking the home. The latter was only a disappointing sixth in rank, despite the promotion of the AIR TIGHTNESS PILOT PROJECT, late in 1982.

Suggestions to the Council to help people save energy produced some interesting ideas, mostly related to transportation, with education of the public on conservation following closely. Third in rank was the encouragement of the use of bicycles and fourth the reduction of energy use in public buildings.

An analysis of all suggestions by geographical location of residence of the respondents, indicated a bias in that suburbs asked for public transit improvements, encouragement of car pools and improvement of traffic flows. Inner City residents on the other hand, wanted more CYCLEPATHS and a discouragement of car use by suburbanites. Middle-zone or inner suburb residents had one clear and non-conflicting suggestion - introduce tax rebate for energy-efficient homes.

The correlation of socio-economic characteristics with variables related to the use of energy, indicated that household size, distance to 6 key facilities - workplace, cottage, restaurant, movies, friends' homes and shopping centres - expenditure on car and oil ranked high. These were followed by certain occupations, education levels and age brackets for heads of households. Where both husband and wife earned money, jointly supported and managed the household, habits were geared to the conserver ethic, as for example, visiting several facilities in 'ROUND TRIP' fashion, using natural gas, electricity and solar energy and spending more on buses than any other form of transport.

The most important characteristic of conserver households however, was that both husband and wife were highly educated and evidently highly aware of the crucial role of energy in their lifestyle.

In relation to the Levels of Awareness, indicated under 'Methodology of Survey' in SURVEY 2, the respondents may be placed as follows: -

LEVEL(S)	INDICATIVE ACTIONS/RESPONSES	% OF RESPONDENTS
6 and 7	Altruism - how to help others	145.0
5	Modifying lifestyle	119.0
4	Using products	95.1
1, 2 and 3	(Not tested)	----

Note: Percentages may exceed 100 because respondents were free to indicate more than one alternative or action.

POLICY IMPLICATIONS OF SURVEY FINDINGS

The main advantage of a joint report on two surveys is that trends may be distinguished and long term policy decisions reached. The trends and policy implications of Surveys 1 and 2 may be summarized as follows: -

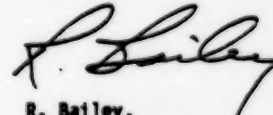
1. Measures of enthusiasm, general attitude and public awareness in energy conservation in Survey 1, taken early in 1982, indicated that the majority of the respondents could be classified as moderate conservers. In Survey 2, carried out in the second half of 1982, the majority of responses were indicative of the two highest levels of awareness. More than 75% of respondents attributed this to the effort of various tiers of government. Municipal effort should therefore be continued in all activities which promote higher awareness in energy conservation.
2. The media were considered to be the most effective means to increase public awareness on energy conservation. It is therefore proposed to continue the CONSERVATION PIPELINE and extend information dissemination activities to the use of TELIDON in Rideau Centre.
3. With regard to the practice of conservation, the easiest actions were the first to be adopted, while the use of new products were second and modification of lifestyles was third.
 - i) The former consisted of turning off lights and turning the thermostat down and the trend from Survey 1 to Survey 2 was from about 30% to over 40% of respondents.
 - ii) The second included upgrading insulation which showed a decline from about 40% in Survey 1 to about 35% in Survey 2. This may be due to the increase in caulking and weatherstripping which progressed from a mere 9% in Survey 1 to over 16% in Survey 2. The increase may be

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attributed to the AIR TIGHTNESS PILOT of the Ontario Ministry of Municipal Affairs and Housing in which Ottawa participated as one of four selected cities in the Province. More publicity given to the results of this project will help to boost the adoption of caulking and weatherstripping as effective conservation measures. The caulking of homes in Ottawa was only sixth in popularity and it would be worthwhile to promote it as a priority action to insulation, in accordance with the Ministry's advice ("Seal Your House First").

- 111) The modification of lifestyles included using the car less often, which had progressed from 6% to 12% between the two Surveys. It is proposed to progressively change the subject of CONSERVATION PIPELINE articles from the technical modification of homes to the gradual modification of lifestyles. Activities which were found to be responsible for the highest consumption of gasoline could form the focus of these articles. The "bandwagon approach" to energy conservation - "most people are doing it - why not join them?" is advocated as a suitable approach for advertisements on the subject, in the publication "Energy - Canadians' Attitudes and Reactions". This corresponds also with the recommendation to use "group social forces to mould behaviour and attitudes" given in the article on "Energy Behaviour" by P.C. Stern and E. Kirkpatrick and published in ENVIRONMENT (Dec. 1977, pp 10-15). Focusing on a segment of the total market at any one time is likely to be more successful.
4. Government sources of information on conservation were considered to be the most reliable and more than 80% of the respondents felt that municipalities should be involved by encouraging energy efficiency in public buildings, keeping the public informed and encouraging neighbourhood initiatives. Fall and winter were confirmed as the months of highest information intake on energy conservation. City Hall should therefore continue to operate the Energy Advice Counter on the 7th Floor and all the latest publications, by all tiers of government, should continue to be made available at that counter. Advice to improve the efficiency of homes has been very popular with builders and do-it-yourself enthusiasts.
5. The general trend from Survey 1 to Survey 2 is from mere talking and taking some initiatives in conservation, to a more active adoption of measures and thinking along community lines. This trend should be encouraged through the Energy Action Plan Process and through public participation in the preparation of neighbourhood plans, on the basis of energy-efficient patterns of land use.

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14/09/82


R. Bailey,
Commissioner of
Community Development.

PUBLIC ATTITUDE ASSESSMENT STUDY ON ENERGY CONSERVATION

STAGE I: INFORMAL CONVERSATIONS

List of Issues to be discussed with interviewee(s)

Issues to be raised by interviewer.	Topics mentioned by interviewee(s).
(e.g. Have you installed any INSULATION in your house?)	(e.g. Yes, but I got a lot of CONDENSATION after insulating.)

A. THE CONCEPT

1. What does ENERGY CONSERVATION mean to you?
2. How did you LEARN about conservation?
3. What have you DONE, if anything, to conserve energy in your house?
4. Have you started any new HABITS to help save energy?
5. Do you feel that your effort and expense have been WORTHWHILE?

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B. WHEN

6. WHERE would you seek more information on conservation?

7. WHEN, during the year do you find yourself looking for more information on the subject?

8. WHOSE responsibility should it be to inform people about energy conservation?

9. WHAT sources of information do you consider to be most reliable on energy conservation?

10. WHO do you find this source to be most reliable?

11. Do you find it all very confusing?

12. NOW would you suggest that information on conservation be given to people?

C. GOVERNMENT AND COUNCIL POLICY

13. What would you say is the
FEDERAL GOVERNMENT'S POLICY
on conservation?
14. Does the PROVINCIAL GOVERNMENT
also have a policy?
15. Do you think the MUNICIPALITIES
should have anything to do in
energy conservation?
16. What kind of POLICY -if any-
should the CITY have on the
matter?
17. Have you seen any of the
articles for the CONSERVATION
PIPELINE published on the
City Information page of the
"Citizen"?
18. What KIND OF INFORMATION
would you like to see in the
"Conservation Pipeline"
articles?
-

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D. THE ACTION PLAN

19. What action should the City Council take to INVOLVE PEOPLE in energy conservation?

20. Have you heard of the City of Ottawa's ACTION PLAN PROCESS ON ENERGY CONSERVATION?

Thank you very much for your time.

Here is a copy of the COUNCIL'S POLICY and of the ACTION PLAN PROCESS ON CONSERVATION. Don't hesitate to write or call the City Energy Planner if you have questions. The telephone number and address are inside.

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ASSESSMENT

(To be carried out by interviewer after the meeting).

A. On the CONCEPT of ENERGY CONSERVATION,
I consider (this interviewee/household/group)
..... (name) to be:

RATHER UNWARE

WELL AWARE

1 2 3 4 5 6
(Circle the appropriate number above).

B. On the USE of conservation, I consider him/her/then to be:

RATHER UNWARE

WELL AWARE

1 2 3 4 5 6

C. About POLICY on conservation, I consider him/her/then to be:

RATHER UNWARE

WELL AWARE

1 2 3 4 5 6

D. On the ACTION PLAN for conservation,

RATHER UNWARE

WELL AWARE

1 2 3 4 5 6

My conversation indicated the following relevant information about this
interviewee/household/group:

Age group(s):

Profession(s):

General enthusiasm about energy conservation: (circle one)

Very High

Moderate

Low

Absent

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RECORD

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ATTACHMENT 1

SURVEY 1: INFORMAL CONVERSATIONS WITH INDIVIDUALS AND ORGANIZATIONS.

(February end March 1982)

Description of Sample

A total of some 128 responses were recorded from 79 households, 28 individuals and 22 organizations and community groups. While 61% of those interviewed did not disclose their profession, the remaining 39% consisted of:

8 housewives	1 professor
5 secretaries	1 clerk
4 retired senior citizens	1 church youth director
3 managers	1 nurse
3 waitresses	1 retailer
2 students	1 chef
2 custodians	1 unemployed
2 bankers	1 garbage collector
2 engineers	1 police officer
	1 "intellectual"

60% did not disclose their age, while the remaining 40% consisted of the following age groups:

20-30 years	20%
30-40 years	25%
40-50 years	25%
50-60 years	18%
60-70 years	8%
70+ years	4%

Methodology of Survey

Face-to-face informal conversations were held in shopping centres, private homes and organization offices or club premises. Where face-to-face meetings could not be arranged, the telephone was used. Interviewers raised issues related to four topics:

- A) Concept of Energy Conservation
- B) W5 + H of conservation (who, when, where, why, what and how)
- C) Policy on conservation
- D) Action Plan for conservation

Feedback recorded by the interviewers has been classified under the above topics.

Results

A) CONCEPT OF ENERGY CONSERVATION

Question 1: What does Energy Conservation mean to you?

<u>Responses:</u>	(1) "Conserve energy".....43%
	(2) "Conserve for future"....25%
	(3) "Use energy wisely".....11%
	(4) "Saving money".....9%
	(5) No comment.....7%
	(6) "Nothing".....3%
	(7) "Retain heat in winter"...2%

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Question 2: How did you learn about conservation?Responses: (1)Media.....56%

- (2) No comment.....13%
- (3) Pamphlets/publications.....9%
- (4) Government advertisements...8%
- (5) Friends.....5%
- (6) Rising fuel bills.....3%
- (7) Displays.....2%
- (8) Self-study.....2%
- (9) School.....1%
- (10) Work.....1%

Question 3: What have you done, if anything, to conserve energy in your house?Responses:

- (1) Upgraded insulation.....40%
- (2) Turned down thermostat.....30%
- (3) Turned off lights more often.....24%
- (4) Nothing.....14%
- (5) Added new windows/storm windows.....9%
- (6) Weather stripping/caulking.....9%
- (7) Wood stove/fireplace.....8%
- (8) Converted to gas/electricity.....7%
- (9) Cold water wash/Turned down hot water heater.4%
- (10) Wore sweaters/Used more blankets.....2%
- (11) Used appliances efficiently.....2%
- (12) Insulated solar water heater.....2%
- (13) Bought new house.....2%
- (14) Installed new furnace.....1%
- (15) Installed heat pump.....1%

Question 4: Have you started any new habits to help save energy?Responses:

- (1) Turned down thermostat.....41%
- (2) Turned off lights.....35%
- (3) No.....23%
- (4) Started to take the bus.....13%
- (5) Used car less.....6%

- (6) Used appliances efficiently...6%
- (7) Used less hot water.....5%
- (8) Joined a car pool.....4%
- (9) Walked more often.....2%
- (10) Used fireplace.....1%
- (11) Used more blankets.....1%

Question 5: Do you feel that your effort and expense have been worthwhile?

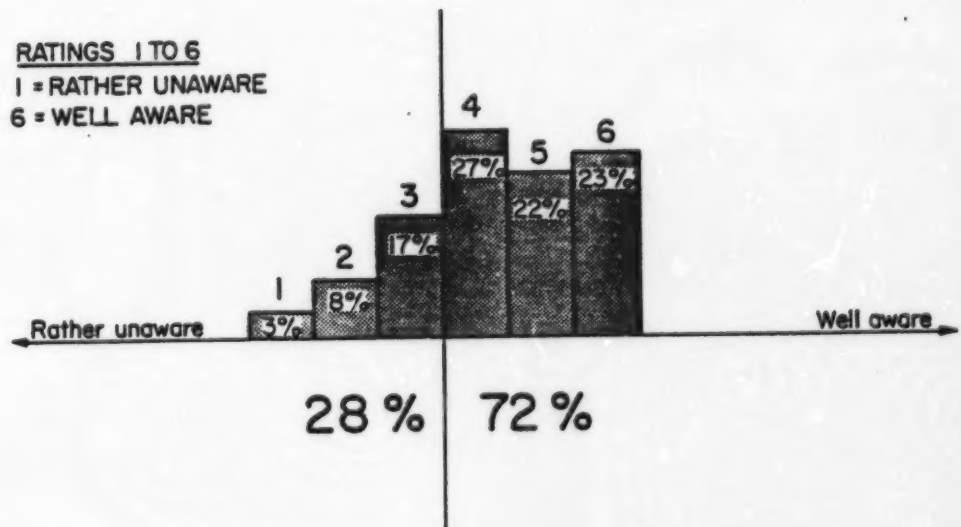
- Responses:
- (1) Yes.....65%
 - (2) No.....13%
 - (3) No comment.....13%
 - (4) Somewhat.....7%
 - (5) Not sure.....2%

Generally, those interviewed were very much aware of the concept of energy conservation. Awareness levels were given ratings from 1 to 6; See Chart below.

RATINGS 1 TO 6

1 = RATHER UNAWARE

6 = WELL AWARE



B) THE W5 + H OF CONSERVATION (Where, When, What, Who, Why and How)

Question 6: Where would you seek more information on conservation?

- Responses:
- (1) Government/Energy Mines & Resources.....57%
 - (2) No comment.....13%
 - (3) Media.....11%

- (4) Publications.....6%
- (5) Don't know.....4%
- (6) Hydro.....2%
- (7) Ministry of Environment of Ontario.....2%
- (8) City of Ottawa Energy Section.....2%
- (9) Friends.....1%
- (10) Shell Canada.....1%

Question 7: When, during the year do you find yourself looking for more information on the subject?

- Responses:
- (1) Winter.....36%
 - (2) Fall.....27%
 - (3) No comment.....23%
 - (4) Year round.....5%
 - (5) Summer.....3%
 - (6) Spring.....3%
 - (7) When first fuel bill comes in.....2%
 - (8) Don't know/don't care.....1%

Question 8: Whose responsibility should it be to inform people about energy conservation?

- Responses:
- (1) Government/Energy, Mines & Resources....59%
 - (2) Everyone's.....13%
 - (3) Provincial Government.....9%
 - (4) No comment.....9%
 - (5) City Hall.....6%
 - (6) Fuel companies.....3%
 - (7) Schools.....2%
 - (8) Media.....2%

Question 9: What sources of information do you consider to be most reliable on energy conservation?

- Responses:
- (1) Not sure/Confused.....27%
 - (2) Media.....27%
 - (3) Government.....24%
 - (4) Publications.....15%
 - (5) Advertisement.....6%
 - (6) Consumer guides.....2%

- (7) Conservation Pipeline.....1%
- (8) Hydro.....1%
- (9) Schools.....1%
- (10) Self.....1%

Question 10: Why do you find this source to be the most reliable?

- Responses:
- (1) No comment.....41%
 - (2) "The Government is a good source of information".....23%
 - (3) "T.V. reaches out to many people".....9%
 - (4) "Newspaper reaches out to many people"...1%
 - (5) "Media provides first hand information"..1%

Question 11: Do you or do you not find it all rather confusing?

- Responses:
- (1) No.....52%
 - (2) Yes.....20%
 - (3) No comment.....19%
 - (4) A little.....9%

Question 12: How would you suggest information on conservation be given to people?

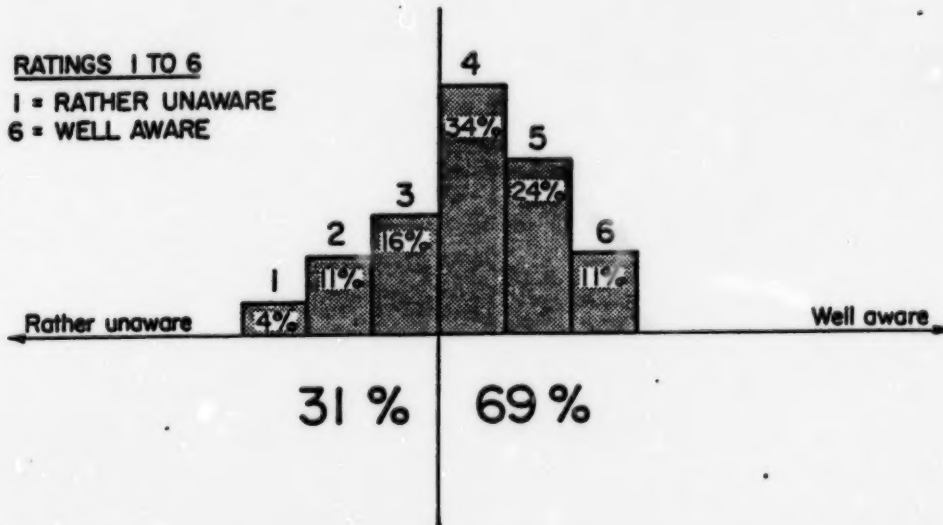
- Responses:
- (1) Media.....42%
 - (2) Flyers/pamphlets.....19%
 - (3) No comment.....15%
 - (4) Advertisements.....11%
 - (5) Mail.....7%
 - (6) Through government.....6%
 - (7) Schools.....4%
 - (8) Exhibits.....2%
 - (9) Community meetings.....2%

Generally, those interviewed were aware of the W5 + H of conservation. Awareness levels are given ratings from 1 to 6. See Chart below.

RATINGS 1 TO 6

1 = RATHER UNAWARE

6 = WELL AWARE



C) POLICY ON CONSERVATION

Question 13: What would you say is the Federal Government's policy on conservation?

Responses:

- (1) No comment.....46%
- (2) Conserve energy.....21%
- (3) Encourage conservation for future.....13%
- (4) Inform public of cost, needs, and availability of energy sources.....3%
- (5) Encourage conversion from oil to gas or electricity.....1%

Question 14: Does the Provincial Government also have a policy?

Responses:

- (1) Yes.....51%
- (2) No comment.....46%
- (3) No.....3%

Question 15: Do you think the Municipalities should have anything to do in energy conservation?

Responses:

- (1) Yes.....80%
- (2) No comment.....15%
- (3) No.....5%

Question 16: What kind of Policy if any should the City have on the matter?

Responses:

- (1) No comment.....69%
- (2) Conserve energy/encourage energy efficiency.....15%

- (3) Keep public informed.....9%
- (4) Encourage local neighbourhood initiative.....3%
- (5) Strict policy.....2%
- (6) Encourage builders to build energy efficient buildings.....1%
- (7) Set examples.....1%

Question 17: Have you seen any of the articles in the Conservation Pipeline published on the City Information Page of the Citizen?

- Responses:
- (1) Yes.....45%
 - (2) No.....40%
 - (3) No comment.....15%

Question 18: What kind of information would you like to see in the CONSERVATION PIPELINE articles?

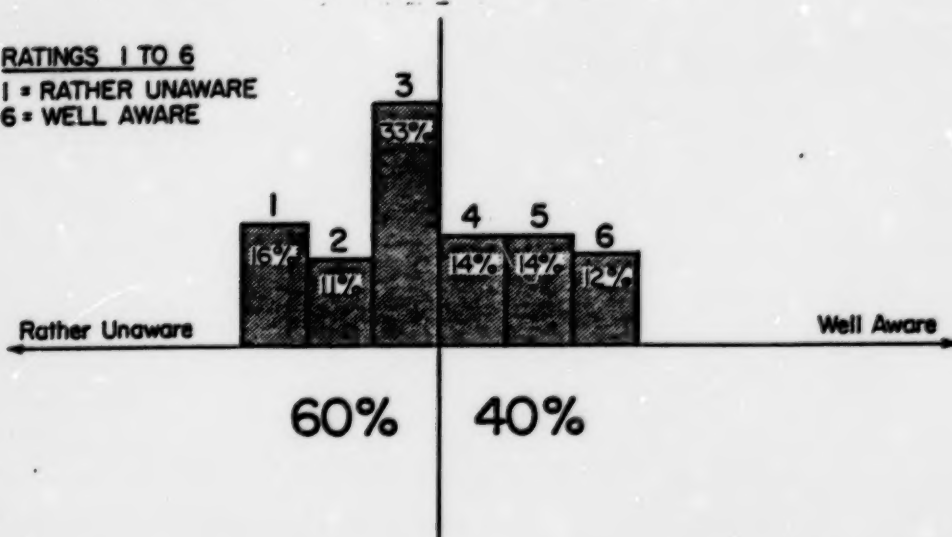
- Responses:
- (1) No comment.....46%
 - (2) Conservation methods.....39%
 - (3) Tips to save money.....5%
 - (4) Case studies of problems & their solutions.....3%
 - (5) How to insulate home.....2%
 - (6) Result of surveys.....2%
 - (7) Sealing windows and doors.....1%
 - (8) Heating systems and their efficiencies...1%
 - (9) How much consumer uses vs. wastes.....1%

Generally, those interviewed were unaware of Government and Council Policy on conservation. Awareness Levels are given ratings from 1 to 6; See Chart below.

RATINGS 1 TO 6

1 = RATHER UNAWARE

6 = WELL AWARE



D) ACTION PLAN FOR CONSERVATION

Question 19: What action should the City Council take to involve people in energy conservation?

Responses:

- (1) No comment.....44%
- (2) Public participation process.....37%
- (3) Informative advertising.....9%
- (4) Education in schools.....5%
- (5) Create incentives.....4%
- (6) Set examples in public buildings.....3%

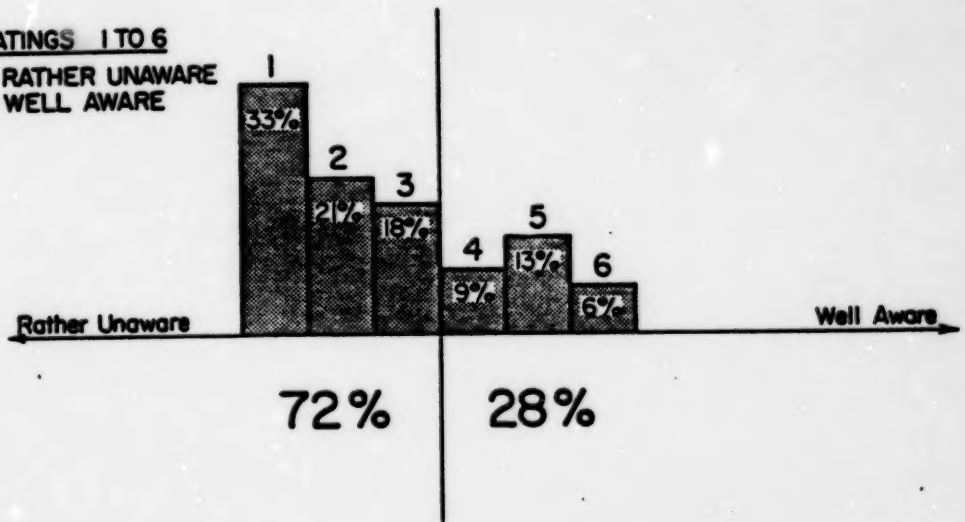
Question 20: Have you heard of the City of Ottawa's Action Plan Process on Energy Conservation?

Responses:

- (1) No.....56%
- (2) Yes.....22%
- (3) No comment.....22%

Generally, those interviewed were very unaware of the Action Plan for conservation. Awareness levels are given ratings from 1 to 6; See Chart below.

RATINGS 1 TO 6
1 = RATHER UNAWARE
6 = WELL AWARE



ATTACHMENT 2

SURVEY 2: QUESTIONNAIRE ON ENERGY USE AND LEVELS OF AWARENESS IN CONSERVATION

(August and September 1982)

Description of Sample

The attached questionnaire (Part 3 of a wider survey related to ENERGY USE AND LAND USE PATTERNS IN THE CITY, a research project sponsored by the Ontario Ministries of Energy and of Municipal Affairs and Housing) was forwarded to an evenly distributed sample of 2,000 households in the City. Response was received from 753, which represents a proportion of 37.6% in relation to the total - more than 4% in excess of the response usually expected from questionnaire surveys). This sample is liable to an error of $\pm 1.4\%$ which may be considered very safe for reaching significant conclusions.

A parallel survey of 100 households carried by a consultant (referred to a CONTROL SAMPLE) provided useful comparison in some key statistics, to ensure that the response to the Survey was representative of the City as whole.

Methodology of Survey

On the assumption that the action taken by an individual is indicative of the level of awareness he or she has reached on an issue - whether it is political, social, environmental or other - it was decided to define such levels in Energy Conservation (EC) as follows: -

<u>LEVELS</u>	<u>ACTIONS INDICATIVE OF THE LEVEL</u>
(Highest) 7	Campaigning in favour of EC
6	Joining organizations in favour of EC
5	Modifying one's lifestyle in favour of EC
4	Using products/spending to ensure EC
3	Attending events related to EC
2	Understanding the terminology of EC
1 (Lowest)	Noticing articles/books/T.V. programmes on EC

Levels 1, 2 and 3 were not considered suitable for inclusion as questions on the Survey Form.

The objective of the Council's Community Outreach Programme is to help achieve the most advanced levels in the awareness of Energy Conservation, in the largest possible number of citizens, through persuasion.

The attached questionnaire was therefore designed to establish the actions taken by household heads, the use of energy made at home and by car, suggestions to help people save energy and personal characteristics of household members. The questions were directly or indirectly related to the 7 levels of awareness. The suggestions to help people save energy for example was related to altruistic motives and "campaigning in favour of EC" (Highest level).

Distribution and collection of questionnaires was carried out by students and the response was classified in three geographical zones as shown on Map 1. This allowed a better interpretation of some responses - e.g. "Encourage formation of car pools" was more often called for in the City Suburbs.

Results

Analysis of the data involved in the usual frequency counts to derive percentages as shown on the following pages, but considerable benefit was also derived from Principal Components and Factor Analysis which were used for the broader research project, as indicated above. The results will be given in the sequence of questions given on the Questionnaire, with the most significant ones appearing at the end, as an additional benefit derived from the research project.

000020

Part 3: ENERGY USE (To be completed by the head of the household)

C08E

The following questions are related to the consumption and cost of energy for various household purposes.

1. What is the approximate total annual mileage (no. of kms) travelled by the car(s) used by your household? (check)

Less than 5,000 ☐	15,001 - 20,000 ☐
5,000 - 10,000 ☐	20,001 - 25,000 ☐
10,001 - 15,000 ☐	Over 25,000 ☐

80

2. Approximately how much is spent per year by your household for the maintenance, insurance and purchase of gasoline to run the car(s) used?

81

3. What is the approximate total annual amount spent by your household for bus or other public transit journeys.

82

4. Please complete the following table:

Type of energy used by your household	Purpose(s)* for which it is used	Approximate annual cost (\$) to the household	
1. Electricity			83
2. Nat. gas			84
3. Oil			85
4. Coal			86
5. Solar			87

*Please use one or several of the following initials as a code: -

S = Space heating H = Battery warming A = Indoor/outdoor appliances
 W = Water heating L = Lighting T = Travel

5. What ways have you used to save energy at home?

1. 88

2. 89

3. 90

4. 91

5. 92

6. 93

7. 94

8. 95

000021

6. What would be your suggestions to the Council to help people to save energy?

1.	96
2.	97
3.	98
4.	99
5.	100
6.	101
7.	102
8.	103
9.	104
10.	105

7. Please indicate the approximate age, occupation and level of education of each member of your household (no names need be indicated)

Number	Age	Occupation	Education	
1.				106-9
2.				110-3
3.				114-7
4.				118-1
5.				122-3
6.				124-7

8. Which of the following indicates the approximate total net income (i.e. after tax) of all the working members of your household? (check)

Less than \$10,000 ☐

\$20,000-\$30,000 ☐

\$30,000-\$40,000 ☐

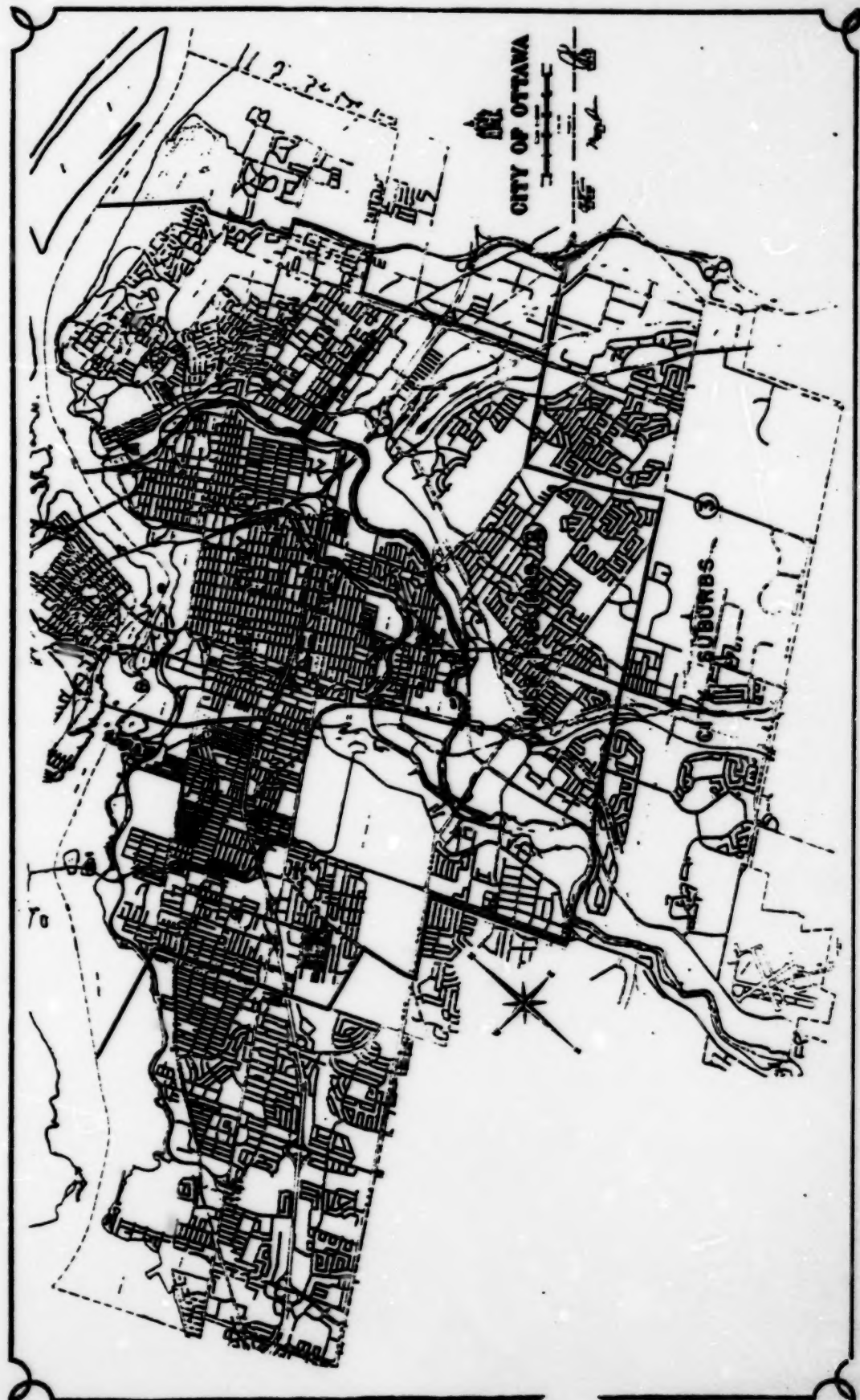
Over \$40,000 ☐

128-1

Thank you for your co-operation in this survey. All information will be treated as confidential. This survey form will be collected within 3 days. If you are not likely to be available at the time, please call 563-3000.

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A2800

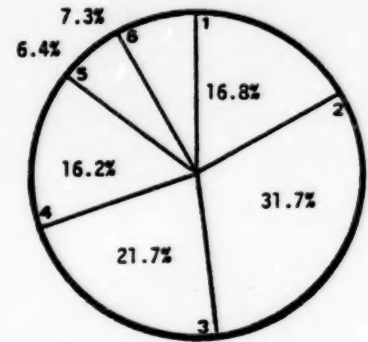
000022



QUESTION 1: What is the approximate total annual kmileage (no. of kms) travelled by the car(s) used by your household?

KMS DRIVEN PER YEAR

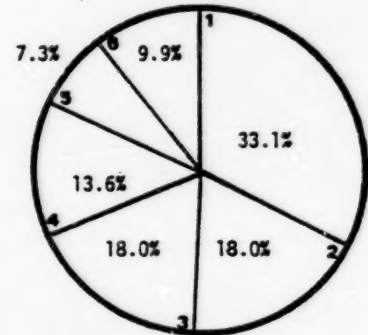
CATEGORY LABEL	ADJUSTED FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)	CODE
< 5000	16.8	16.8	1
5000-10000	31.7	48.5	2
10001-15000	21.6	70.1	3
15001-20000	16.2	86.3	4
20001-25000	6.4	92.7	5
> 25000	7.3	100.0	



About half (48.5%) of all respondents drive less than 10,000 kms/year and only about 14% drive over 20,000. The comparatively small urban size and relatively direct road network of Ottawa may be the main reasons for these low annual mileages. It would be of interest to compare these percentages in later years, as gasoline prices mount (240% to 260% increases are expected over current prices by 1992, according to the Ontario Ministry of Energy projections) or decline (due to temporary oil 'gluts') and as the Energy Advisory Committee's Action Plan on Transportation - due in 1984-85 - is implemented.

QUESTION 2: Approximately how much is spent per year by your household for the maintenance, insurance and purchase of gasoline to run the car(s) used?

CATEGORY LABEL	ADJUSTED FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)	CODE
< 500	33.1	33.1	1
501 TO 1000	14.0	47.2	2
1001 TO 1500	18.0	65.2	3
1501 TO 2000	13.6	78.8	4
2001 TO 2500	7.3	86.1	5
>2500	5.0	100.0	6
	100.0		



More than half (51.2%) of all respondents spend less than \$1,000 per year and less than 10% spent more than \$2,500. Once more it should be interesting to compare these figures in later years.

USES OF ELECTRICITY

CATEGORY LABEL	CODE	COUNT	PCT OF RESPONSES	PCT OF CASES
SPACE HEATING	1	87	10.3	10.6
WATER HEATING	2	296	27.2	40.0
AUTO BLOCK-BAT.HEAT	3	79	8.4	19.1
HOUSE LIGHT-COOKING	4	910	84.1	87.7
TOTAL RESPONSES		942	100.0	100.0

USES OF NATURAL GAS

CATEGORY LABEL	CODE	COUNT	PCT OF RESPONSES	PCT OF CASES
SPACE HEATING	1	142	82.0	94.0
WATER HEATING	2	83	38.2	99.0
AUTO BLOCK-BAT.HEAT	3	1	0.4	0.7
HOUSE LIGHT-COOKING	4	1	0.4	0.7
TRAVEL	5	2	0.9	1.3
TOTAL RESPONSES		229	100.0	101.7

USES OF OIL

CATEGORY LABEL	CODE	COUNT	PCT OF RESPONSES	PCT OF CASES
SPACE HEATING	1	293	88.8	97.0
WATER HEATING	2	26	8.3	9.3
HOUSE LIGHT-COOKING	4	4	0.3	0.3
TRAVEL	5	8	2.4	2.6
TOTAL RESPONSES		330	100.0	109.3

USES OF GASOLINE

CATEGORY LABEL	CODE	COUNT	PCT OF RESPONSES	PCT OF CASES
SPACE HEATING	1	8	2.2	2.2
WATER HEATING	2	1	0.4	0.4
AUTO BLOCK-BAT.HEAT	3	1	0.4	0.4
HOUSE LIGHT-COOKING	4	3	1.1	1.1
TRAVEL	5	266	96.0	96.7
TOTAL RESPONSES		277	100.0	100.7

USES OF SOLAR ENERGY

CATEGORY LABEL	CODE	COUNT	PCT OF RESPONSES	PCT OF CASES
SPACE HEATING	1	10	47.6	96.8
WATER HEATING	2	4	19.0	23.5
AUTO BLOCK-BAT.HEAT	3	2	9.5	11.0
HOUSE LIGHT-COOKING	4	2	9.5	11.0
TRAVEL	5	3	14.3	17.0
TOTAL RESPONSES		21	100.0	123.3

000025

TOTAL NET INCOME

CATEGORY LABEL	CODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)
< 10000	1	94	8.8	10.2	10.2
10000-20000	2	127	21.0	24.1	34.3
20000-30000	3	142	23.5	28.9	61.2
>30000	4	205	33.9	38.8	100.0
OUT OF RANGE		76	12.8	MISSING	100.0
TOTAL		604	100.0	100.0	

ANNUAL OIL EXPENSE

CATEGORY LABEL	CODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)
< 100	1	9	0.8	1.9
200-299	3	5	0.8	3.8
300-399	4	8	1.3	7.0
400-499	5	9	1.5	10.5
500-599	6	16	2.6	16.7
600-699	7	20	3.3	24.5
700-799	8	37	6.1	34.9
800-899	9	38	6.3	53.7
900-999	10	20	3.3	61.5
> 1000	11	99	16.4	100.0
OUT OF RANGE		347	57.5	100.0
TOTAL		604	100.0	

ANNUAL GASOLINE EXPENSE

CATEGORY LABEL	CODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)
< 100	1	8	1.0	2.6
100-199	2	4	0.7	4.4
200-299	3	8	1.3	7.9
300-399	4	15	2.5	14.5
400-499	5	13	2.2	20.3
500-599	6	28	4.8	32.6
600-699	7	24	4.0	43.2
700-799	8	8	1.3	48.7
800-899	9	21	3.5	55.9
900-999	10	3	0.5	57.3
> 1000	11	97	16.1	100.0
OUT OF RANGE		377	62.4	100.0
TOTAL		604	100.0	

ANNUAL SOLAR ENERGY COST

CATEGORY LABEL	CODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)
100-199	2	1	0.2	25.0
> 1000	11	3	0.5	100.0
OUT OF RANGE		600	99.3	100.0
TOTAL		604	100.0	

000026

ENERGY USE SURVEY

(CREATION DATE = 12/09/82)

GROUP TRANSV WAYS TO SAVE ON TRANSPORTATION COSTS

CATEGORY LABEL	CODE	COUNT	PCT OF RESPONSES	PCT OF CASES
CAR POOL	1	58	14.0	20.4
CYCLING	2	88	21.4	31.4
BUS	3	72	18.0	26.3
WALKING	4	117	29.2	42.7
OTHER	5	70	17.5	25.3
	TOTAL RESPONSES	401	100.0	100.0

ANNUAL ELECTRICITY EXPENSE

CATEGORY LABEL	CODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)
< 100	1	12	2.0	2.0
100-199	2	38	6.0	11.0
200-299	3	53	8.6	24.4
300-399	4	98	15.9	47.8
400-499	5	55	8.1	58.9
500-599	6	43	7.1	71.3
600-699	7	42	7.0	81.4
700-799	8	18	2.8	89.3
800-899	9	14	2.3	88.8
900-999	10	6	1.0	90.1
> 1000	11	41	6.6	100.0
OUT OF RANGE		190	31.5	100.0
	TOTAL	604	100.0	

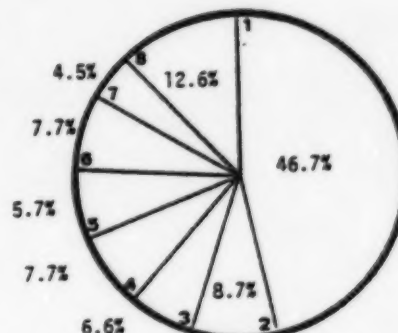
ANNUAL NATURAL GAS EXPENSE

CATEGORY LABEL	CODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)
< 100	1	5	0.8	4.3
200-299	3	3	0.5	8.8
300-399	4	5	0.8	11.1
400-499	5	17	2.8	29.8
500-599	6	19	3.1	41.8
600-699	7	15	2.5	54.7
700-799	8	13	2.2	65.8
800-899	9	8	1.3	72.8
900-999	10	2	0.3	74.4
> 1000	11	30	5.0	100.0
OUT OF RANGE		487	80.6	100.0
	TOTAL	604	100.0	

000027

QUESTION 3: What is the approximate total amount spent by your household for bus or other public transit journeys?

CATEGORY LABEL	ADJUSTED FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)	CODE
< 25	46.7	46.7	1
25 TO 50	8.7	55.4	2
51 TO 75	6.6	62.0	3
76 TO 100	7.7	69.7	4
101 TO 150	9.9	79.6	5
151 TO 200	7.7	87.3	6
201 TO 250	4.5	91.8	7
251 TO 300	12.6	100.0	8



About half (46.7%) of the respondents spent less than \$25.00 and about 1/8th spent over \$250.00.

QUESTION 4: (Table on types of energy used, purpose and cost of each to the household)

Type of Fuel	Use for space heating		Use for water heating	
	No. of hshlds	%	No. of hshlds	%
Electricity	97	17.7	256	68.8
Nat. gas	142	25.9	83	22.3
Oil	293	53.5	28	7.5
Gasoline	6	1.1	1	0.4
Solar energy	10	1.8	4	1.0
Total	548	100.0	372	100.0

This summary table of the principal two domestic uses of energy indicates that more than half the responding households used oil for heating. In August, 1982, there was therefore considerable scope for promoting the Canada Oil Substitution Programme (COSP) in order to minimize the import of oil for heating. Fortunately, the picture for water heating was much better with more than 92% of households using Canadian fuels - electricity or natural gas - or solar energy.

QUESTION 5: What ways have you used to save energy

The statistical summary table indicates that more than 85% of the respondents had carried out the easiest gestures in relation to conservation - i.e. turning lights off when not needed and turning the thermostat down. A national survey on ENERGY: CANADIANS' ATTITUDES AND REACTIONS" by G.H.G. MacDougall and G. Keller (1981) warned against "symbolic" gestures like these being mentioned by respondents to show adherence to conservation, but the fact cannot be denied that they are the first steps toward lifestyle modification. "Turning down the thermostat" in particular does help to save energy and it cannot be discounted as being merely "symbolic".

A regrouping of the ways used to save energy into actions indicative of various levels of awareness (see definition under Methodology of Survey) was carried out as follows: -

ENERGY USE SURVEY

(CREATION DATE = 12/09/82)

WAYS USED TO SAVE ENERGY

CATEGORY LABEL	COUNT	PCT OF RESPONSES	PCT OF CASES
TURN OFF LIGHTS	247	19.9	41.1
TURN DOWN THERMOSTAT	258	17.3	46.6
UPGRADE INSULATION	213	13.7	39.4
WEATHERSTRIP-CAULK	98	8.3	16.3
USE APPLIANCES EFF.	116	7.9	19.3
USE LESS HOT WATER	121	7.8	20.1
USE CAR LESS	72	4.8	12.0
NEW WINDOWS-DOORS	72	4.8	12.0
CON. OIL TO GAS-ELEC	24	1.9	4.0
WOODSTOVE-FIREPLACE	33	2.1	5.3
MAINT. FURNACE/ELEC.	24	1.9	4.0
HEAT PUMP	13	0.8	2.2
CLOSE UNUSED ROOMS	11	0.8	2.0
THERMAL SHADES	20	1.3	3.3
SPACE HEATERS	13	0.8	2.2
CLOSE IN PORCH	3	0.2	0.5
SWEATERS-BLANKETS	16	1.0	2.7
SUNNER AVNINGS	4	0.3	0.7
FANS VS. A-C	10	1.2	3.0
OIL & CANDLE LIGHT	3	0.2	0.5
REDUCE POOL HEATING	1	0.1	0.2
SOLAR PANELS	2	0.1	0.3
RECYCLE PAPER ETC.	3	0.2	0.5
TIMER CAR WARMING	19	1.0	2.5
PASSIVE HEAT GAIN	9	0.3	0.4
KEROSENE HEATER	2	0.1	0.3
WIND SCREENS	2	0.1	0.3
CARPET FLOORS	2	0.1	0.3
NO COMMENT	130	8.4	21.6
TOTAL RESPONSES	1552	100.0	100.2

000029

Ways to save energy (Category labels transcribed from Summary Table)	Level 4 (Using products)		Level 5 Modifying lifestyles	
	No. of	% of respondents	No. of	% of respondents
Turn off lights	--	--	247	41.1
Turn down thermostat	--	--	268	44.6
Upgrade insulation	213	35.4	--	--
Weatherstripping-Caulking	98	16.3	--	--
Use efficient appliances	116	19.3	--	--
Use less hot water	--	--	121	20.1
Use the car less often	--	--	72	12.0
Fix new windows/doors	72	12.0	--	--
Convert to Gas/electricity	24	4.0	--	--
(Other minor items)	50	8.1	7	1.2
Totals	573	95.1	715	119.0

The "percent of cases" columns indicate that many households have taken actions indicative of both levels of awareness - i.e. used new products as well as modified their lifestyles in favour of conservation.

A regrouping of households by geographical zone in the City - see Map 1 - produced the following table: -

Ways to save Energy	% OF ALL HOUSEHOLDS RESPONDING			
	Inner City	Inner Suburbs	City Suburbs	City
Turn off lights	42.3	41.2	40.1	41.1
Turn down thermostat	32.2	53.1	52.0	44.6
Upgrade insulation	21.3	37.1	45.2	35.4
Use efficient appliances	16.3	20.2	21.1	19.3
Use less hot water	15.3	18.1	22.2	20.1
Weatherstripping/Caulking	12.9	16.1	18.1	16.3

In view of the fact that Ottawa was one of 4 cities in the Province to be selected for the AIR TIGHTNESS PILOT PROJECT, it is disappointing to find that Weatherstripping and Caulking ranks only sixth in popularity among Ways to Save Energy. This will be referred to in the Conclusion.

QUESTION 6: What would be your suggestions to the Council to help people save energy?

This was considered to be the most appropriate question to establish altruistic motives in the highest levels of awareness in energy conservation. The responses had to be sorted out carefully to establish the presence of altruism in each and the results were as follows: -

While 33.5% of the respondents had no suggestions to offer the Council as to ways to help people save energy, it is noteworthy that about two in every three households approached, had come up with an altruistic suggestion. This is no doubt a large proportion for a city to claim in terms of households in the highest levels of public awareness in energy conservation, but unfortunately there are no comparable statistics or surveys for other municipalities. It is significant however, that the study of "ENERGY: CANADIANS' ATTITUDES AND REACTIONS" referred to above, established that "Residents of Halifax and Ottawa tend to view the energy problem more seriously than residents of other cities".

Some of the most often repeated suggestions are related to transportation matters and they are as follows: -

SUGGESTION	%
Improve the public transit system	14.8
Educate the public on conservation	10.5
Encourage the use of bicycles	4.5
Reduce energy use in public buildings	4.4
Discourage the use of the car	4.3
Improve the flow of traffic	3.6
Introduce tax rebates for energy-efficient buildings	3.2

ENERGY USE SURVEY

(CREATION DATE = 12/09/02)

SUGGESTED WAYS

CATEGORY LABEL	COUNT	PCT OF RESPONSES	PCT OF CASES
IMPR. TRANSIT SYSTEM	120	14.0	21.9
RED EN. USE PUB.BLDG	30	4.4	6.4
ELIMINATE STOP SIGNS	14	1.6	2.4
INFORM TENANTS	3	0.3	0.5
RECYCLING PAPER-GLAS	10	1.2	1.7
EDUCATE PUBLIC	91	10.9	19.3
PUB.SURVEY RESULTS	5	0.6	0.8
ENCOURAGE CYCLING	39	4.5	6.8
DISCOURAGE CAR USE	37	4.3	6.2
ADVERTISING	10	2.1	3.0
ENCOURAGE CAR POOLS	14	1.6	2.4
RED. CITY VEHICLE USE	10	2.1	3.0
HOUSING IN CITY CORE	4	0.5	0.7
MORE DAYCARE FACIL.	3	0.3	0.5
TAX REBATE EN.-EFF.	20	3.2	4.7
REV. PROJECTS EN.-EFF.	6	0.7	1.0
INC. OIL SUB. GRANTS	3	0.3	0.5
UPGR. STREET LIGHTING	1	0.1	0.2
IMPROVE TRAFFIC FLOW	31	3.6	5.2
FUEL CO-OPS	5	0.6	0.8
BAN CARS CITY CORE	6	0.8	1.3
GAS STATION HOURS	1	0.1	0.2
SYNC. TRAFF. LIGHTS	2	0.2	0.3
ADD.TAX FOR EX.ENG.	6	0.7	1.0
LIMIT ELEC. USE	14	1.6	2.4
ENCOURAGE USE M.P.	2	0.2	0.3
IMPROVE URBAN STRUC.	5	0.6	0.8
BLDG.CODE REI INSUL.	10	1.2	1.7
PUBLICIZE WALKING	17	2.0	2.9
NO COMMENT	209	33.9	49.8
EXTEND SHOP HOURS	6	0.7	1.0
PRIVATE ELECTRICITY	2	0.2	0.3
REC.FAC.NEAR HOMES	3	0.3	0.5
AVOID UNN.ROAD MAINT	2	0.2	0.3
TOTAL RESPONSES	863	100.0	149.0

000031

Some geographical bias in terms of the residential location of the respondent was visible in the following responses: -

Suggestion to Council to help people save energy	Inner City %	Inner Suburbs %	City Suburbs %	City %
Improve public transit	10.8	18.2	24.1	14.8
Discourage car use	6.9	4.1	2.9	6.2
Improve traffic flow	4.1	5.1	8.1	5.2
Encourage bicycle use	7.1	9.1	2.1	4.5
Tax rebate for efficiency	1.8	5.1	2.3	3.2
Encourage car pools	1.0	2.8	5.1	2.4

All these suggestions could no doubt be introduced in the Council's policy on energy conservation and the geographical distribution of various responses could provide a clue as to where should the implementation of some suggestions be initiated for a successful outcome. Car pooling, for example should evidently be encouraged first in the City suburbs. This will be referred to in the Conclusions.

The last two questions helped to relate various suggestions and practices to socio-economic characteristics. The best way to summarize these would be to quote relevant findings from the Principal Components and Factor Analysis carried out in part of the research project ENERGY USE AND LAND USE PATTERNS IN THE CITY, as follows: -

1. The characteristics of households vulnerable to the price and availability of energy in 1982 included: Large number of persons in the household; long distance to cottage, restaurants, husband's workplace, movies, friends' homes and shopping centres; high expenditure on car(s), heating oil and gasoline; comparatively low income per household member, depending on the occupation, education and age of the head of the household; and large annual car kmileage (no. of kms).
2. Conversely, the characteristics of households with conserver habits included: Visiting facilities in 'round trips', use of natural gas, electricity or solar energy; high expenditure on public transport; and dependence on two highly educated principal members to head the household.
3. Ranking the 21 most popular destinations in Ottawa lifestyles by annual mileage of car travel to visit them, indicated that 6 activities - commuting to work, shopping, going to restaurants, to the cottage, social visiting and movie-going, caused nearly 80% of the total travel to these 21 destinations.

All these findings have implications for marketing various aspects of energy conservation, as referred to in the conclusions and POLICY IMPLICATIONS part of this Report (pp. 2-5)

REFERENCES:

- McDougall, G.H.; Keller, G; (1981): ENERGY: CANADIANS' ATTITUDES AND REACTIONS (1975-1980) consumer and Corporate Affairs, Canada
- Stern, P.C.; Kirkpatrick, E; (1977): ENERGY BEHAVIOUR published in ENVIRONMENT, (Dec. 1977, pp 10-15)

POOR

QUALITY

ORIGINAL